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CENTRAL INTELLIGENCE AGENCY 25X1

REPORT

## INFORMATION REPORT

CD NO.

COUNTRY USSR (Ukrainian SSR)

DATE DISTR. 2 Dec. 1949

SUBJECT October Revolution Locomotive Plant in Voroshilovgrad

NO. OF PAGES 6

PLACE ACQUIRED

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25X1 1. The October Revolution Plant is the largest locomotive plant in the Soviet Union.

2. The plant is located at the northeastern outskirts of VOROSHILOVGRAD (formerl. LUGANSK (48°34'N/39°20'E), Eastern Donets Area, Ukrainian SSR), in the angle formed by the VOROSHILOVGRAD - KILEROVO railroad line and the Lugan River, south of the railroad line. It is bordered by the river in the south and by a water ditch in the north. It has a ramified track net with spur connection to the main railroad line.

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## 3. Plant History

a. The plant was built between 1910 and 1912 by the Hartmann Firm in CHEMILIZ (N 51/R 66). It was expropriated in the 1920s. Extensions were built in 1930. In 1942 the plant installations were evacuated to the east. They were severely damaged during the war.

b. Reconstruction was started in 1945. Only part of the old mechanical equipment was used, about two-thirds of the installations being American or dismantled German machines. Most of the German machines allegedly came from the Schichau Shipyard in ELBING (N 55/R 90).

c. About 40 German P's, engineers, and architects were assigned to reconstruction work in leading positions. The reconstruction was largely completed by the middle of 1948 but additional extensions are scheduled.

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4. Plant Installations



(1) Axle and spring forge (old forge)

Installation: Lathes, milling machines, etc.  
Production: Axles and springs for locomotives and tenders are tooled.

(2) Tube department

Installation: Unknown.  
Production: Light tubes. Heavy tubes are supplied from an outside plant.

(3) Lathe shop

Installation: A great number of lathes, milling machines, planers, grinding machines, and boring machines.  
Production: Unknown.

(4) Lathe shop

Installation: A large number of lathes (including 4 vertical turning and boring lathes and 1 fully automatic lathe, of US make), planers, milling, grinding, and drilling machines. Some lathes had a center length up to 40 feet.  
Production: Bars 65 feet long, 4 to 5 inches in diameter, with a large nut on both ends (connecting rods?).

(5) Screw and bolt department

Installation: Several small annealing furnaces and 25 lathes.  
Production: Screws, nuts, and bolts.

(6) Old boiler forge

Installation: 30 to 40 electric welding apparatuses  
3 autogenous cutting apparatuses  
1 tube bending machine  
1 electric hammer  
10 pneumatic hammers  
4 punching machines  
6 drilling machines.

The boiler forge has:

- (a) Plate-cutting shop with 1 annealing furnace and 1 press
- (b) Lathe shop with 10 large lathes
- (c) Boiler assembly shop with riveting hammers, drilling machines, and an X-ray installation for investigating welding seams.

Production: Steam boilers for locomotives, 5 feet in diameter and 20 feet long.

The finished boilers are submitted to water pressure tests. Sheet metal smoke stacks, locomotive and tender jackets are manufactured, allegedly in an extension building

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(7) Final assembly department and department for locomotive and tender wheel frames ("Ovy Paravosny")

This is the largest workshop and was rebuilt in 1946/47. It consists of approximately 12 sections. The construction was not completed in the middle of 1948.

Installation: It included one large slotting and milling machine (dismantled in the Schichau Shipyard in "LITKO"), 3 large and 4 medium-size planers, 2 large lathes for turning locomotive wheels and axles.

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Section A Had traveling cranes, drilling machines, and other metal-working machinery. A track passed through this section.

Section I The roofing construction of this workshop was not completed in August 1948. The workshop was still vacant.

Section II It had one pneumatic hammer, fully automatic punching machines, one adjusting forge, auto-genous and electric welding machines, 5 or 6 each, and a bending machine. The locomotive and tender wheel frames were assembled in this shop.

Section III Its equipment included 12 large planers. Its production included section iron parts.

Section B It had a track installation and a crane. In addition to the construction of wheel frames, the final assembly of locomotives was resumed at the end of 1948.

(8) Department for metal constructions ( ZEK )

Metal structures (girders, etc.) for plant construction projects as well as frames for locomotives and tenders were manufactured.

(9) Final assembly department (including varnishing shop)

It consists of one longitudinal workshop and three transversal workshops with assembly tracks. The wheel frames assembled in the wheel frame department are conveyed here by shunting locomotives where the completed locomotive superstructure is mounted.

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A varnishing shop is in the longitudinal workshop. The locomotives are again spray-painted after the test run. Two tracks pass through the workshop, each accommodating two locomotives.

The workshop allegedly is not sufficient to meet the demands of the Five Year Plan. Part of Workshop o. 7 is scheduled to also serve for the final assembly of locomotives.

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(10) Steel foundry

Installation (1941): 4 open-hearth furnaces with a volumetric capacity of 35 tons each  
 2 electric furnaces  
 2 scrap crushers  
 1 electric crane  
 8 cutting machines  
 1 hydraulic press of 100 tons.

Two open-hearth furnaces (oil firing) were in operation in July 1948. The restoration of the other two furnaces was almost completed.

Production: Steel for cylinders, wheels, and other large parts. Cylinders, pistons, wheels, couplings, and buffers are cast.

(11) Forge and Pressing department ( KPE )

Installation: It has large and small hammer mills, partly operated by compressed air, partly by steam, one 500-ton and one 500-ton press, ball and screw punching machines, lathes, milling machines, planers, 20 annealing furnaces with oil firing.

Production: Tooling of piston rods, connecting rods, wheels, and springs.

(12) Rolling mill department

Installation: 3 parallel rolling mills:

- 1 rolling mill for plates and sheets with a roughing, intermediate, and finishing train each;
- 1 rolling mill for section iron with a roughing, intermediate, and finishing train each;
- 1 rolling mill for bar iron with a roughing, intermediate, and finishing train each.

This department also has 3 shears, 3 punching machines, and 6 annealing furnaces partly fired with coal, partly with oil. The rolls are driven by steam.

Production: Sheets ranging from 2 mm to 20 mm, plates (hoop iron?), bar iron (round and octagonal), and section iron.

(13) Gray iron foundry

Installation: 3 or 4 furnaces

Production: Firing grates and other gray castings.

(14) Nonferrous metal foundry

Installation: Probably 4 to 6 small furnaces

Production: Bearings, fittings, and small parts for boilers.

(15) Mechanical workshop (assembly of wheel sets)

Installation: About 30 lathes, drilling machines, planers, milling machines, slotting machines.

Production: Turning of axles and wheels, manufacturing of parts for brake systems, fitting of tires to the wheels, mounting of wheels on axles.

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**CONFIDENTIAL**(16) Power station (TMA)

The power station has four vertical boilers with coal dust firing, one twin and two single turbines.

(17) Tool department

Installation: About 60 metal-working machines.  
 Production: Tools and machine parts for plant requirement.  
 (Including milling machines, slide gauges, drills)

(18) Laboratory

It served for testing materials.

(19) Sawmill and pattern-making shop

Installation: Two horizontal frame saws and 10 to 15 wood-working machines.  
 Production: Patterns for molds. Also windows, doors, furniture, etc., for the plant.

(20) Fire clay department

No details available.

(21) New building (new boiler forge)

This building was not completed in September 1947. The roofing was scheduled to be completed in 1948. A new boiler forge will allegedly be installed in this building.

(22) Engine house and repairshop

No details available.

(23) Oil and fuel tanks

The dump consists of approximately 10 horizontal, half-underground tanks (40 feet long, 8 feet in diameter).

(24) Oxygen factory for manufacturing oxygen and filling plant requirements and allegedly also for outside recipients.

(25) Plant kitchen(26) Administration building

A four-story building housing the administration and management offices, the technical designing and drafting offices, and the laboratories.

(27) Water tower(28) Wooden bridge and main entrance(29) New building

No details are available.

(30) Construction office

No details are available.

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5. Productiona. Construction Models

Before the war the plant produced the locomotive types "FD", "SO", and "93" but at the beginning of the war was converted to the production of armored locomotives and medium-size tanks (until the plant was evacuated). When production was resumed early in 1946 the plant allegedly manufactured bogie wheels in addition to a small number of locomotives. Early in 1946 the plant was restored to large-scale locomotive production. The first locomotives [axle formula (Russian) 2-4-2] apparently were mostly repaired or gauge-widened former German engines. The tenders had 4 wheels on each side (two twin sets of wheels each). The locomotive had a snowplow in front. The output of the locomotives is 1,500 to 1,700 HP. It is also reported that the new locomotive models "SO" and "FD" were constructed and repaired. The first locomotive of a new series (Russian axle formula: 1-5-2) was completed at the end of 1948. Its maximum speed is 93 miles per hour and the boiler pressure is 20 to 22 atm.gauge. In 1949 test runs were made with a combined steam and Diesel locomotive. \*\*

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b. Production Figures

The following monthly production figures were gathered [redacted]

October 1945	1
August 1946	9
February 1947	12
August 1947	20

According to press report the 300th postwar locomotive was completed on 20 January 1948.

January 1948	25
July 1948	30

The 1950 monthly output is scheduled to be 75 steam locomotives (880 locomotives annually).

6. Power and Raw Material Supply

The plant has its own power station. Coal shipments come from STALINO (48°00'N/37°48'E) and pig iron shipments come from the VOROSHILOVSK (48°30'N/38°47'E) Ironworks.

7. Work Force and Working Time

Prewar work force: About 45,000  
1948 work force: About 30,000.

In most departments work is done in three shifts of 8 hours each.

[redacted] Comment: The locomotive types do not quite agree with those previously reported.

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[redacted] Comment: Probably an oil burning, steam driven locomotive.